REMARKS

Claims 1, 2, 3, 4, 8, 10, 14, 19, 20, 21, 23, 26, 27, 28, 29, 36 and 37 have been amended.

Rejections Under 35 U.S.C. § 112, first paragraph

Claims 1-37 were rejected to under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way to enable one skilled in the art to which pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant respectfully traverses the rejection.

Examiner states,

it is unclear whether the electroactive polymer actually "deflects" (the terminology used in the specification and claims) which indicates a bending mode of operation. It appears that the polymer actually expands and/or contracts in a single plane (expansion made) and therefore does not actually deflect. Thus, without clarity as to how the device operates one cannot make or use the device.

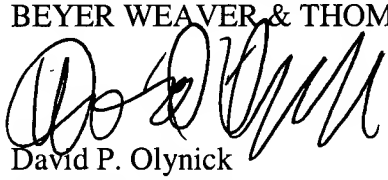
From the specification of the application (Page 7, lines 30-32), it states that "In general, deflection refers to any displacement, expansion, contraction, torsion, linear or area strain, or any other deformation of a portion of the polymer." Therefore, a deflection as described in the specification may refer to an expansion or a contraction. Thus, applicant disagrees with the examiner and believes the subject matter was described in the specification in such a way to enable one skilled art to make and/or use the invention.

However, examiner points out while applicant may be his or her lexicographer, a term in a claim may not be given a meaning repugnant to the usually meaning of that term. Examiner states the term deflections in claims 1-37 is used by the claims to mean "expansion/contraction," while the accepting meaning is "bending." To clarify the claim language, the terms "deflect," "deflected," and "deflection," have been replaced in claims 1-37 with "deform," "deformed," and "deformation." Applicant believes these amendments are supported in the specification (e.g., see Page 7, lines 30-32) and add no new matter.

Accordingly, Applicants respectfully submit that all pending claims are sufficiently clear and thus respectfully request withdrawal of the rejection under 35 U.S.C. § 112, first paragraph.

Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
BEYER WEAVER & THOMAS, LLP



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APPENDIX A

VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) A device for converting between electrical energy and mechanical energy, the device comprising at least one electroactive polymer having a first active area, the first active area comprising at least two first active area electrodes and a first portion of the at least one electroactive polymer, the first portion arranged in a manner which causes the first portion to [deflect]deform in response to a change in electric field provided by the at least two first active area electrodes and/or arranged in a manner which causes a change in electric field in response to [deflection]deformation of the first portion, wherein the device is arranged such that [deflection]deformation of the first portion in response to a change in electric field and/or [deflection]deformation of the first portion causing a change in electric field is at least partially assisted by mechanical input energy.

2. (Amended) The device of claim 1 wherein the mechanical input energy is substantially equal to the elastic energy required to [deflect]deform the first portion of the electroactive polymer for a part of the [deflection]deformation.

3. (Amended) The device of claim 2 wherein the mechanical input energy is substantially equal to the elastic energy required to [deflect]deform the first portion of the electroactive polymer for an entire [deflection]deformation corresponding to an actuation.

4. (Amended) The device of claim 1 wherein the mechanical input energy is less than the elastic energy required to [deflect]deform the first portion of the electroactive polymer for a part of the [deflection]deformation.

8. (Amended) The device of claim 5 further comprising a second active area, the second active area comprising at least two second active area electrodes and a third portion of the at least one

electroactive polymer, the third portion arranged in a manner which causes the third portion to [deflect]deform in response to a change in electric field provided by the at least two second active area electrodes and/or arranged in a manner which causes a change in electric field in response to [deflection]deformation of the third portion.

10. (Amended) The device of claim 8 wherein the first active area and the second active area are arranged such that [deflection]deformation of the first portion comprises a direction of contraction that is at least partially linearly aligned with a direction of expansion for the third portion.

15. (Amended) The device of claim 1 wherein the at least one electroactive polymer is arranged such that elastic potential energy of the at least one electroactive polymer is independent of [deflection]deformation in response to a change in electric field provided by the at least two first active area electrodes and/or [deflection]deformation which causes a change in electric field.

19. (Amended)A device for converting between electrical energy and mechanical energy, the device comprising at least one electroactive polymer, the at least one electroactive polymer comprising a first active area, the first active area comprising at least two first active area electrodes and a first portion of the at least one electroactive polymer, the first portion arranged in a manner which causes the first portion to [deflect]deform in response to a change in electric field provided by the at least two first active area electrodes and/or arranged in a manner which causes a change in electric field in response to [deflection]deformation of the first portion, wherein the at least one electroactive polymer is arranged such that elastic potential energy of the device is substantially independent of [deflection]deformation of the first portion in response to a change in electric field and/or [deflection]deformation of the first portion causing a change in electric field.

20. (Amended) The device of claim 19 wherein the at least one electroactive polymer is arranged such that elastic potential energy of the device is substantially constant during [deflection]deformation of the first portion in response to a change in electric field and/or [deflection]deformation of the first portion causing a change in electric field.

21. (Amended)The device of claim 20 further comprising a home position having a lower elastic potential energy than the substantially constant elastic potential energy of the device during [deflection]deformation of the first portion.

22. (Amended)The device of claim 19 further comprising a second active area, the second active area comprising at least two second active area electrodes and a second portion of the at least one electroactive polymer, the second portion arranged in a manner which causes the second portion to [deflect]deform in response to a change in electric field provided by the at least two second active area electrodes and/or arranged in a manner which causes a change in electric field in response to [deflection]deformation of the second portion.

23. (Amended) The device of claim 22 wherein the first active area and the second active area are arranged such that [deflection]deformation of the first portion includes a direction of contraction that is at least partially linearly aligned with a direction of expansion for the second portion.

26. (Amended) The device of claim 19 further comprising a mechanism that assists substantially independent elastic potential energy [deflection]deformation of the device.

27. (Amended) The device of claim 26 wherein the mechanism is a motion constraint that constrains the [deflection]deformation of the device.

28. (Amended) A method of using at least one electroactive polymer, the at least one electroactive polymer comprising a first active area, the first active area comprising at least two first active area electrodes and a first portion of the at least one electroactive polymer, the method comprising deflecting the first portion such that elastic potential energy of the at least one electroactive polymer is substantially constant for the [deflection]deformation.

29. (Amended) The method of claim 28 wherein the [deflection]deformation is in response to a change in electric field provided by the at least two first active area electrodes.

36. (Amended) The method of claim 30 wherein the first portion and second portion are [deflected]deformed to move a third portion of the at least one electroactive polymer along a path.

37. (Amended) The method of claim 28 wherein the first portion is [deflected]deformed in resonant mode.